Remark

Applicants respectfully request reconsideration of this application. Claims 1, 2, 7, 20, 21 and 22 have been amended. Claim 10 has been cancelled. Therefore, claims 1-9 and 11-22 remain present for examination.

35 U.S.C. §103 Rejection

Buehrer and Boariu

The Examiner has maintained the rejection of claims 1-9 and 11-22 under 35 U.S.C. §103 (a) as being unpatentable over Buehrer, U.S. Patent Application Publication 2003/0081656 ("Buehrer"), in view of Boariu, U.S. Patent No. 6,865,237 ("Boariu").

The present invention features a multi-carrier communication channel with intra-channel spatial diversity. The claims have been clarified some and it can be seen that each of the sub-carriers is using a different set of weights. The weights determine how the signal is sent through a multiple antenna array. These weights applied to each of the N signals creates spatial diversity between each of the sub-carriers.

Different Physical Path

Buehrer clearly shows that each of the M transmit antennas each send their own signal. The different antennas provide diversity only in that their spatial locations are different. The Examiner refers to paragraph 91, but this describes the signal for only one antenna. There is no suggestion that anything is done to get the antennas to operate together to send a single signal.

Boariu simply shows conventional transmit diversity using a single antenna for each transmission.

Claim 1, for example, refers to "splitting each of the sub-carriers into N signals one for each of a plurality of antenna paths, wherein each of the sub-carriers is to be transmitted over an array of N antennas using a different antenna path for each signal" and "modifying each of the sub-carriers by a set of complex weights."

The Examiner would appear to be reading "complex weights" onto Walsh codes in the Response to Arguments. Beuhrer uses Walsh codes to allow the mobile to differentiate signals from different antennas (before combining them). The Walsh codes are applied to the data, not to the carriers and have no part in antenna paths.

The Examiner has not provided any specific analysis as to how either reference achieves "each of the sub-carriers is to be transmitted over an array of two or more antennas... by a set of complex weights... to ensure that each of the sub-carriers... propagates along a different physical path." In the references, a single antenna is used to achieve a different physical path. There is no splitting into N signals and no complex weights for each of the N signals with different antenna paths for each signal to achieve diversity.

Accordingly, the rejection is respectfully traversed.

Redundant Transmission

Applicant's previous remarks took the position that each of the M sub-carriers carried the same data and that this feature distinguished Buehrer. While Applicants maintain that such a feature is not shown in Bueher, a further review of the specification has revealed that this feature is not necessary to the present invention. Accordingly the claims have been amended to state that the sub-carriers "at least partially redundantly transmit the information over a multi-carrier wireless communication channel."

This terminology is meant to convey that each sub-carrier might contain exactly the same information or only some of the same information. In other words, the information may be completely redundant or only partly redundant.

In the one case, this feature would be similar to that of Beuhrer.

Conclusion

Applicants respectfully submit that the rejections have been overcome by the amendment and remark, and that the claims as amended are now in condition for allowance. Accordingly, Applicants respectfully request the rejections be withdrawn and the claims as amended be allowed.

Invitation for a Telephone Interview

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

Request for an Extension of Time

Applicants respectfully petition for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17(a) for such an extension.

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: March 16, 2009

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